

MESInterface IT

Quick Start MELSEC Driver

mitsubishi

Q series
Q series

Mitsubishi
Programmable Controller

MELSEC-Q

MESInterface IT
(VN-SWMIT1-E)

□ SAFETY PRECAUTIONS □

(Always read these instructions before using this equipment.)

Before using this product, please read this manual and the relevant manuals introduced in this manual carefully and pay full attention to safety to handle the product correctly.

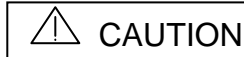
The instructions given in this manual are concerned with this product. For the safety instructions of the programmable controller system, please read the CPU module user's manual.

In this manual, the safety instructions are ranked as "DANGER" and "CAUTION".



DANGER

Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.



CAUTION

Indicates that incorrect handling may cause hazardous conditions, resulting in medium or slight personal injury or physical damage.

Note that the ! CAUTION level may lead to a serious consequence according to the circumstances.

Always follow the instructions of both levels because they are important to personal safety.

Please save this manual to make it accessible when required and always forward it to the end user.

[Design Instructions]

DANGER

- When performing data changes or status control from the personal computer to the running PLC, configure up an interlock circuit outside the PLC system to ensure that the whole system will operate safely. In addition, predetermine corrective actions for the system so that you can take measures against any communication error caused by a cable connection fault or the like in online operations performed from the peripheral device to the PLC.

CAUTION

- Read the manual carefully before performing the online operations (especially forced output and operating status change) which will be executed with the personal computer connected to the running CPU module. Not doing so can damage the machine or cause an accident due to misoperation.

REVISIONS

* The manual number is given on the bottom left of the back cover.

Print Date	* Manual Number	Revisions
Oct., 2008	BAD-804Q006-A0	First edition
May., 2009	BAD-804Q006-A1	<u>Addition</u> Section 5.1
Nov., 2009	BAD-804Q006-A2	<u>Correction</u> Section 3.1 Section 4.1
Feb., 2010	BAD-804Q006-A3	<u>Correction</u> Section 4.1 Section 5.4
Sep., 2010	BAD-804Q006-A4	<u>Correction</u> Section 3.1 Section 4.1 Section 5.1 <u>Addition</u> Appendix A Appendix B Appendix C
Jan., 2011	BAD-804Q006-A5	<u>Correction</u> Section 3.1 Section 4.1 Appendix A <u>Addition</u> Appendix D
Jun., 2011	BAD-804Q006-A6	<u>Correction</u> Section 3.1 Section 4.1 Appendix D
Mar., 2012	BAD-804Q006-A7	<u>Correction</u> Section 3.1 Section 4.1 Section 5.1 Section 6 Appendix A <u>Addition</u> Appendix E

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Using Driver

This booklet provides the information for MELSEC PLC driver usage in MESInterface IT and clarifies the specification the driver supports.

The MELSEC PLC driver is used to communicate between MESInterface IT and MELSEC Q PLC. MELSEC Q is not only one on the same base unit (whose communication is called local access) but also one on the another base unit via network (whose communication is called remote access).

1 Process for creating the CPU in Devices node

The process to create the MELSEC CPU in Devices node, add new MELSEC CPU, define the type of CPU, and define of connection parameters. You can check the network the target CPU from the Workbench, even if the target CPU is not connected directly from Workbench but via relay CPU. Also in devices you can see the CPU status that information includes either CPU work or not work.

Process

The following lists the order of the steps to create and then test the CPU

- [Step 1:Defining the MELSEC CPU](#) . This step describes how to add MELSEC CPU item.
- [Step 2:Checking MELSEC CPU state](#). This step describes how to check the MELSEC CPU states. The connection between Workbench and MESInterface core is also checkable
- [Step 3:Modifying MELSEC CPU state](#). This step describes how to modify the MELSE CPU state
- [Step 4:Checking MELSEC CPU performances](#). This step describes how to checking the performance of MELSEC CPU.

2 Assumptions

Before you begin, make sure the following has occurred:

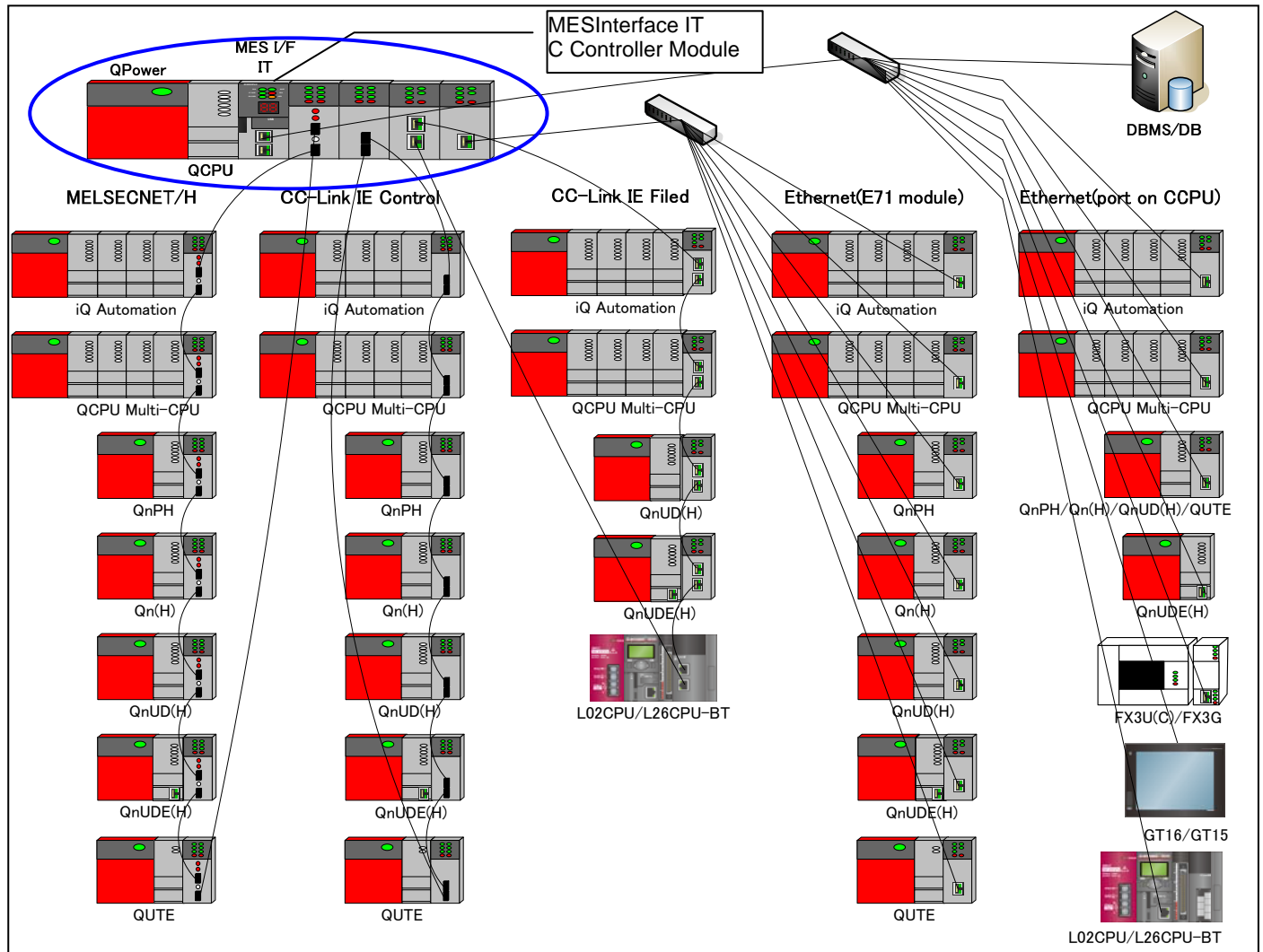
- You installed an MESInterface IT module on the rack of a supported programmable logic controller.
- You installed the Workbench on a computer that has TCP connectivity to the MESInterface IT module.
- The Workbench was previously started and you have a user ID and password.

3 SYSTEM CONFIGURATION AND SPECIFICATIONS

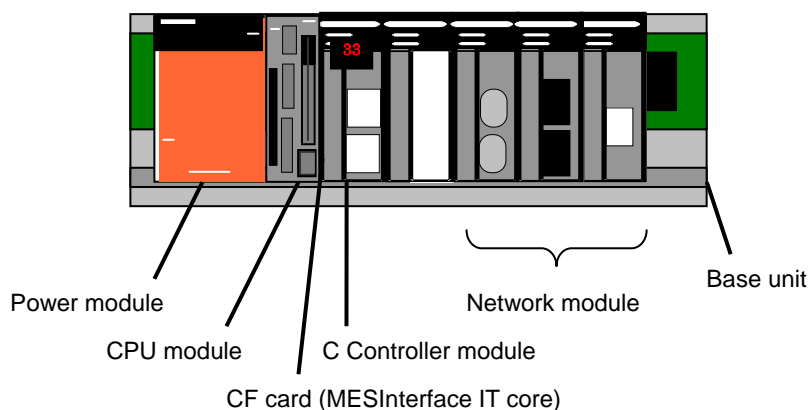
3.1 System Configuration

3.1.1 Overall system configuration

This section shows the overall system configuration when using the MESInterface IT with C Controller Module. This module is placed at middle of MELSEC equipment and IT system, and it manages FA system under it.



3.1.2 Basic System configuration



1. CPU module

Follow show the available CPU module as CPU module.

CPU type		CPU model name
QCPU (Q mode)	Basic model QCPU	Q00CPU, Q01CPU
	High Performance model QCPU	Q02(H)CPU, Q06HCPU, Q12HCPU, Q25HCPU
	Process CPU	Q02PHCPU, Q06PHCPU, Q12PHCPU, Q25PHCPU
	Redundant CPU	
	Universal model QCPU	Q00UCPU, Q01UCPU, Q02UCPU Q03UDCPU, Q04UDHCPU, Q06UDHCPU, Q10UDHCPU, Q13UDHCPU, Q20UDHCPU, Q26UDHCPU, Q03UDECPU, Q04UDEHCPU, Q06UDEHCPU, Q10UDEHCPU, Q13UDEHCPU, Q20UDEHCPU, Q26UDEHCPU, Q50UDEHCPU, Q100UDEHCPU

CPU module should be mounted as No.1 CPU, and only 1 CPU is available to mount.

2. C Controller module

Only Q12DCCPU-V is available.

Only 1 C Controller module is available to mount.

C Controller module can operate in a rack without any Q Series CPUs in that rack. In this case, the C Controller module is mounted in the "CPU" slot. In this case, Network module is not available.

3. Network module

Refer following Available network section for which network is supported.

All network modules are controlled by No.1 CPU.

Refer MELSEC PC manual for QCPU User's Manual (Multiple CPU System) for detail information.

4 SPECIFICATIONS

4.1 Accessible Devices and Ranges

This section explains the accessible devices and accessible ranges.

For inaccessible programmable controller CPUs, refer to the following.

4.1.1 Accessible CPU Module

CPU type		CPU model name
QCPU (Q mode)	Basic model QCPU	Q00CPU, Q01CPU, Q00JCPU
	High Performance model QCPU	Q02(H)CPU, Q06HCPU, Q12HCPU, Q25HCPU
	Process CPU	Q02PHCPU, Q06PHCPU, Q12PHCPU, Q25PHCPU
	Redundant CPU	Q12PRHCPU, Q25PRHCPU
	Universal model QCPU	Q00UJCPU, Q00UCPU, Q01UCPU, Q02UCPU, Q03UDCPU, Q04UDHCPU, Q06UDHCPU, Q10UDHCPU, Q13UDHCPU, Q20UDHCPU, Q26UDHCPU, Q03UDECPU, Q04UDEHCPU, Q06UDEHCPU, Q10UDEHCPU, Q13UDEHCPU, Q20UDEHCPU, Q26UDEHCPU, Q50UDEHCPU, Q100UDEHCPU
FXCPU	FX3U	FX3U-16M, FX3U-32M, FX3U-48M, FX3U-64M, FX3U-80M, FX3U-128M
	FX3UC	FX3UC-16M, FX3UC-32M, FX3UC-64M, FX3UC-96M
	FX3G	FX3G-14M, FX3G-24M, FX3G-40M, FX3G-60M
GOT (1000series)	GT16	GT1695M-XTBA, GT1695M-XTBD, GT1685M-STBA, GT1685M-STBD, GT1675M-STBA, GT1675M-STBD, GT1675M-VTBA, GT1675M-VTBD, GT1675-VNBA, GT1675-VNBD, GT1672-VNBA, GT1672-VNBD, GT1665M-STBA, GT1665M-STBD, GT1665M-VTBA, GT1665M-VTBD, GT1662-VNBA, GT1662-VNBD, GT1665HS-VTBD
		GT1595-XTBA, GT1595-XTBD, GT1585V-STBA, GT1585V-STBD, GT1585-STBA, GT1585-STBD, GT1575V-STBA, GT1575V-STBD, GT1575-STBA, GT1575-STBD, GT1575-VTBA, GT1575-VTBD, GT1575-VNBA, GT1575-VNBD, GT1572-VNBA, GT1572-VNBD, GT1565-VTBA, GT1565-VTBD, GT1562-VNBA, GT1562-VNBD, GT1555-VTBD, GT1555-QTBD, GT1555-QSBD, GT1550-QLBD
	GT15	
LCPUCPU		L02CPU, L26CPU-BT

4.1.2 Available Network

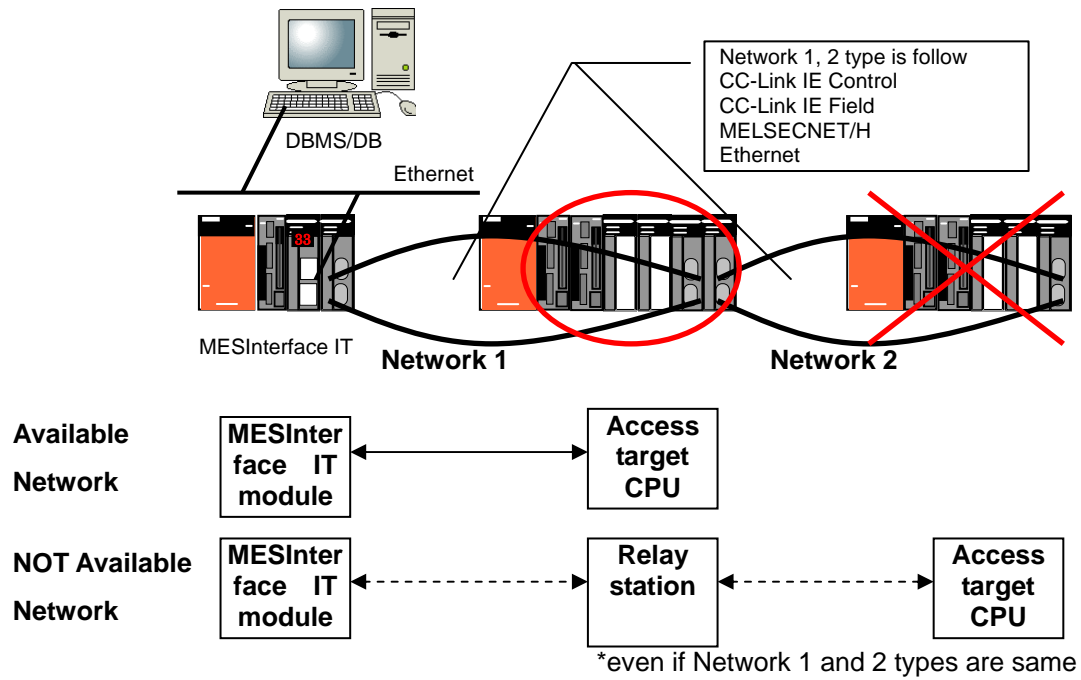
Network	target CPU			
	QCPU (Q mode)	FXCPU	GOT (1000series)	LCPU
Ethernet(E71 module) ^{*1*2}	O	x	x	x
Ethernet(port on CCPU)	O	O	O	O
CC-Link IE Control ^{*1}	O	x	x	x
MELSECNET/10(H) ^{*1}	O	x	x	x
MELSECNET(Ⅱ)/B	x	x	x	x
CC-Link IE Field ^{*1}	O	x	x	O
CC-Link	x	x	x	x
C24	x	x	x	x

O → Available, X→Unavailable

^{*1}: Network module should be managed of the 1st Multi-CPU.

^{*2}: Ethernet Bridged mode.

Rooting network is not supported.



4.1.3 Accessible Devices

The following shows the accessible devices from MESInterface IT module and default range of each accessible devices.

QCPU (EZ)

Device type			QCPU	Qn(H)CPU		QnUD(H)CPU QnUDE(H)CPU		QUTE	
			(Q mode)	Range	Number of point	Range	Number of point	Range	Number of point
Internal Register	Input relay	X	O	X0 -> 1FFF	8192	X0 -> 1FFF	8192	X0 -> 7FF	2048
	Output relay	Y	O	Y0 -> 1FFF	8192	Y0 -> 1FFF	8192	Y0 -> 7FF	2048
	Internal relay	M	O	M0 -> 8191	8192	M0 -> 8191	8192	M0 -> 8191	8192
	Latch relay	L	O	L0 -> 8191	8192	L0 -> 8191	8192	L0 -> 2047	2048
	Annunciator	F	O	F0 -> 2047	2048	F0 -> 2047	2048	F0 -> 1023	1024
	Edge relay	V	x						
	Step relay	S	x						
	Link relay	B	O	B0 -> 1FFF	8192	B0B -> 1FFF	8192	B0 -> 7FF	2048
	Link special relay	SB	O	SB0 -> 7FF	2048	SB0 -> 7FF	2048	SB0 -> 3FF	1024
	Timer	T ^{*1}	O	T0 -> 2047	2048	T0 -> 2047	2048	T0 -> 511	512
	Retentive timer	ST ^{*2}	O	-	0	-	0	-	0
	Counter	C ^{*1}	O	C0 -> 1023	1024	C0 -> 1023	1024	C0 -> 511	512
	Data register	D	O	D0 -> 12287	12288	D0 -> 12287	12288	D0 -> 11135	11136
	Link register	W	O	W0 -> 1FFF	8192	W0 -> 1FFF	8192	W0 -> 7FF	2048
	Link special register	SW	O	SW0 -> 7FF	2048	SW0 -> 7FF	2048	SW0 -> 3FF	1024
	Function input	FX	x						
	Function output	FY	x						
	Special relay	SM ^{*3}	O	SM0 -> 2047	2048	SM0 -> 2047	2048	SM0 -> 1023	1024
		M9000~	x						
	Function register	FD	x						
	Special register	SD ^{*3}	O	SD0 -> 2047	2048	SD0 -> 2047	2048	SD0 -> 1023	1024
		D9000~	x						
External Register	Link input	Jn¥X	x						
	Link output	Jn¥Y	x						
	Link relay	Jn¥B	x						
	Link special relay	Jn¥SB	x						
	Link register	Jn¥W	x						
	Link special register	Jn¥SW	x						
	Intelligent function module device	Un¥G	x						
	Index register	Z	x						
		V	x						
	File register	R	x						
		ZR ^{*2}	O	ZR0 1041407 ->	1017k	ZR0 4184063 ->	4086k	ZR0 65535 ->	64k ^{*4}

FXCPU

Device type			FXCPU	FX3U(C) CPU		FX3G CPU	
				Range	Number of point	Range	Number of point
Internal Register	Input relay	X	O	X0 -> 377(OCT) ^{*5}	256	X0 -> 177(OCT) ^{*5}	128
	Output relay	Y	O	Y0 -> 377(OCT)	256	Y0 -> 177(OCT)	128
	Internal relay	M	O	M0 -> 7679	7680	M0 -> 7679	7680
	Step relay	S	O	S0 -> 4095	4096	S0 -> 4095	4096
	Timer	T	x				
	Counter	C	x				
	Data register	D	O	D0 -> 7999	8000	D0 -> 7999	8000
	File register	R	O	R0 -> 32767	32768	R0 -> 23999	24000
External Register	File register	ER	x				

GOT

The following are virtual devices of GOT used by the "microcomputer connection".

Device type			GOT	GT16		GT15	
			(1000series)	Range	Number of point	Range	Number of point
Internal Register	Data register	D	O	D0 -> 4095	4096	D0 -> 4095	4096
	File register	R	O	R0 -> 4095	4096	R0 -> 4095	4096
	Latch relay	L	O	L0 -> 2047	2048	L0 -> 2047	2048
	Internal relay	M	O	M0 -> 2047	2048	M0 -> 2047	2048
	Special register	SD ^{*3}	O	SD0 -> 15	16	SD0 -> 15	16
	Special relay	SM ^{*3}	O	SM0 -> 63	64	SM0 -> 63	64

QnUDE(H)CPU (Built-in Ethernet)

Device type			QCPU (Q mode)	QnUDE(H)CPU	
				Range	Number of point
Internal Register	Input relay	X	O	X0 -> 1FFF	8192
	Output relay	Y	O	Y0 -> 1FFF	8192
	Internal relay	M	O	M0 -> 8191	8192
	Latch relay	L	O	L0 -> 8191	8192
	Annunciator	F	O	F0 -> 2047	2048
	Edge rely	V	x		
	Step relay	S	x		
	Link relay	B	O	B0 -> 1FFF	8192
	Link special relay	SB	x		
	Timer	T ^{*1}	x		
	Retentive timer	ST ^{*2}	x		
	Counter	C ^{*1}	x		
	Data register	D	O	D0 -> 12287	12288
	Link register	W	O	W0 -> 1FFF	8192
	Link special register	SW	x		
	Function input	FX	x		
	Function output	FY	x		
	Special relay	SM ^{*3}	x		
		M9000~	x		
	Function register	FD	x		
	Special register	SD ^{*3}	x		
		D9000~	x		
External Register	Link input	Jn¥X	x		
	Link output	Jn¥Y	x		
	Link relay	Jn¥B	x		
	Link special relay	Jn¥SB	x		
	Link register	Jn¥W	x		
	Link special register	Jn¥SW	x		
	Intelligent function module device	Un¥G	x		
	Index register	Z	x		
		V	x		
	File register	R	x		
		ZR ^{*2}	O	ZR0 -> 4184063	4086k

LCPU (Built-in Ethernet)

Device type			LCPU	L02CPU		L26CPU-BT	
				Range	Number of point	Range	Number of point
Internal Register	Input relay	X	O	X0 -> 1FFF	8192	X0 -> 1FFF	8192
	Output relay	Y	O	Y0 -> 1FFF	8192	Y0 -> 1FFF	8192
	Internal relay	M	O	M0 -> 8191	8192	M0 -> 8191	8192
	Latch relay	L	O	L0 -> 8191	8192	L0 -> 8191	8192
	Annunciator	F	O	F0 -> 2047	2048	F0 -> 2047	2048
	Edge rely	V	x				
	Step relay	S	x				
	Link relay	B	O	B0 -> 1FFF	8192	B0 -> 1FFF	8192
	Link special relay	SB	x				
	Timer	T	x				
	Retentive timer	ST	x				
	Counter	C	x				
	Data register	D	O	D0 -> 12287 D12288 -> 45055	12288 32768	D0 -> 12287 D12288 -> 143359	12288 131072
	Link register	W	O	W0 -> 1FFF	8192	W0 -> 1FFF	8192
	Link special register	SW	x				
	Function input	FX	x				
	Function output	FY	x				
	Special relay	SM	x				
	Function register	FD	x				
	Special register	SD	x				
External Register	Intelligent function module device	Un≠G	x				
	Index register	Z	x				
		V	x				
	File register	R	x				
		ZR ^{*2}	O	ZR0 -> 65535	65536	ZR0 -> 393215	393216

LCPU (EZ) (CC-Link IE Field)

Device type			LCPU	L02CPU		L26CPU-BT	
				Range	Number of point	Range	Number of point
Internal Register	Input relay	X	O	X0 -> 1FFF	8192	X0 -> 1FFF	8192
	Output relay	Y	O	Y0 -> 1FFF	8192	Y0 -> 1FFF	8192
	Internal relay	M	O	M0 -> 8191	8192	M0 -> 8191	8192
	Latch relay	L	O	L0 -> 8191	8192	L0 -> 8191	8192
	Annunciator	F	O	F0 -> 2047	2048	F0 -> 2047	2048
	Edge rely	V	x				
	Step relay	S	x				
	Link relay	B	O	B0 -> 1FFF	8192	B0 -> 1FFF	8192
	Link special relay	SB	O	SB0 -> 7FF	2048	SB0 -> 7FF	2048
	Timer	T ^{*1}	O	T0 -> 2047	2048	T0 -> 2047	2048
	Retentive timer	ST ^{*2}	O	-	0	-	0
	Counter	C ^{*1}	O	C0 -> 1023	1024	C0 -> 1023	1024
	Data register	D	O	D0 -> 12287 D12288 -> 45055	12288 32768	D0 -> 12287 D12288 -> 143359	12288 131072
	Link register	W	O	W0 -> 1FFF	8192	W0 -> 1FFF	8192
	Link special register	SW	O	SW0 -> 7FF	2048	SW0 -> 7FF	2048
	Function input	FX	x				
	Function output	FY	x				
	Special relay	SM ^{*3}	O	SM0 -> 2047	2048	SM0 -> 2047	2048
	Function register	FD	x				
	Special register	SD ^{*3}	O	SD0 -> 2047	2048	SD0 -> 2047	2048
External Register	Intelligent function module device	Un≠G	x				
	Index register	Z	x				
		V	x				
	File register	R	x				
		ZR ^{*2}	O	ZR0 -> 65535	65536	ZR0 -> 393215	393216

O → Available, X→Unavailable

^{*1}: Contact of QCPU's T and C device is only for reading.

^{*2}: Set number of points to use by the device setting for the PC parameter in GX Works2 as using it.

^{*3}: SM/SD has 3 directions for data setting as follow.

- Set by system.
- Set by user.
- Set by system and user.

Refer MELSEC PC manual for which device is specified with which direction.

^{*4}: Except Q00JCPU and Q00JCPU-S8. They don't have the device type. Because they don't have a memory card I/F.

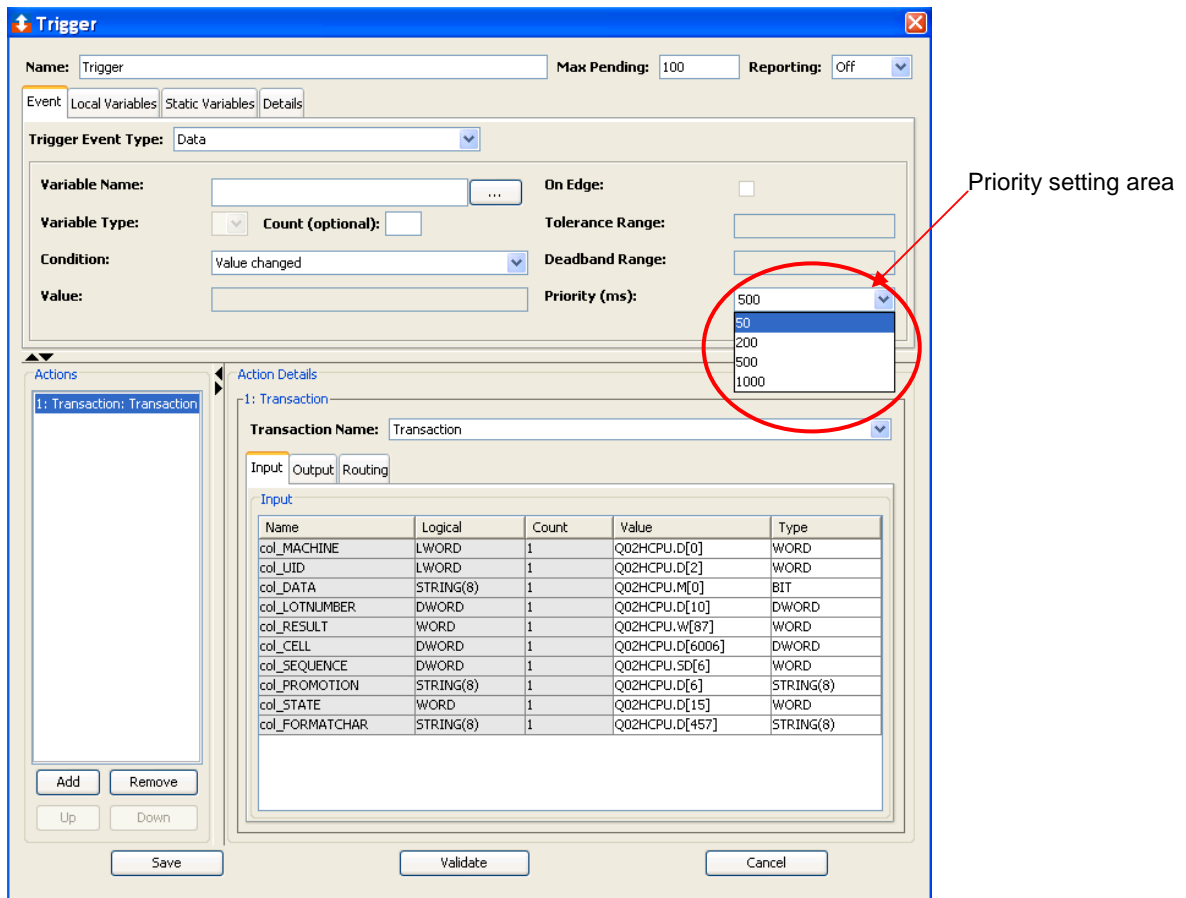
^{*5}: FXCPU's X device occupied as an external input. Available to read the device only. The number

of external input with which X device is occupied is as follows.

CPU model	Range(Oct)	Number of point
FX3U(C)-16M	X0 -> 7	8
FX3U(C)-32M	X0 -> 17	16
FX3U-48M	X0 -> 27	24
FX3U(C)-64M	X0 -> 37	32
FX3U-80M	X0 -> 47	40
FX3UC-96M	X0 -> 57	48
FX3U-128M	X0 -> 77	64
FX3G-14M	X0 -> 7	8
FX3G-24M	X0 -> 17	16
FX3G-40M	X0 -> 27	24
FX3G-60M	X0 -> 47	40

4.2 Device sampling time

To notify the trigger using device value change, MESInterface IT samples specified cycle time that is set in Workbench.



Setting value (unit :msec)	Priority
50	high
200	
500	
1000	low

4.3 Max number of accessible CPU module

This section explains the max number of accessible CPU module.

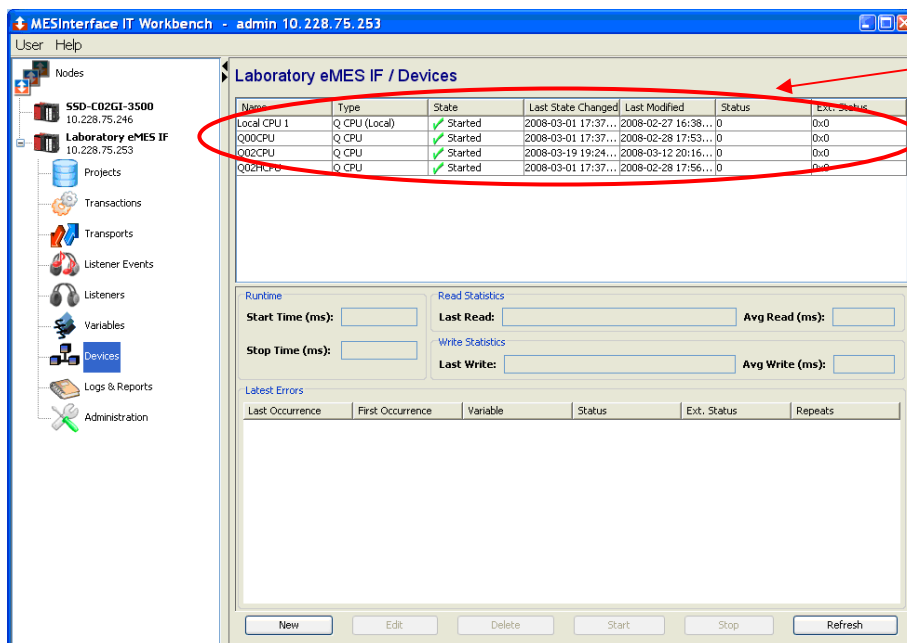
Max number of accessible CPU module is restricted by license key. Default is 5 CPU.

What is accessible CPU module

Q12DCCPU-V can connect and communicate with Local CPU which is mounted on same base module, and other station via network. The module that MESInterface IT can read and write the devices value of those CPU, specially among the connected modules, is named the accessible CPU module.

Follow is the accessible CPU module type.

- **Host station:** Default name is Local CPU. It is mounted on same base module with Q12DCCPU-V including MESInterface IT.
- **Other station:** The modules are specialized by network type, network number, and station number.



Each of record shows accessible module

What is the max number of accessible CPU module

- **Default License:** Max 5 modules are accessible from one C Controller Module.
- **Optional License:** Additional 5 modules are accessible. Please contact to Mitsubishi Electric Corp, or any subsidiaries you always contact.

MESInterface IT Workbench - admin 10.228.75.253

User Help

Nodes

- 550-C02GT-3500
10.228.75.246
- Laboratory eMES IF**
10.228.75.253
 - Projects
 - Transactions
 - Transports
 - Listener Events
 - Listeners
 - Variables
 - Devices
 - Logs & Reports
 - Administration**

Laboratory eMES IF / Administration

Local DB Staging Browser **Network Configuration** Time Management FTP Server Attention BR OPC-VMLDA

Node Administration Licenses Packages Security Notifications Automated Log Export

License Key	Product	Features	Expiration	Status
ZUKPYZF3-2NVLBRHC-NB...	DeviceWISE Enterprise 1	MSSQL_DB2-400,MQTT Tr...	<None>	
SIMXF4W1-MFXWDIEH-K...	DeviceWISE Drivers 1	Rockwell Devices, Microbis...	<None>	
VDYRUKRF-D6V3QN7E-3M...	DeviceWISE Runtime	Devices(255),Triggers	<None>	

New Import Delete Refresh

The screenshot shows the MES Interface IT Workbench window. The title bar indicates the user is 'admin' with IP '10.228.75.253'. The left sidebar contains a tree view with 'Nodes' expanded, showing 'SSD-C02GI-3500', 'NEW MODULE', and 'Laboratory eMES IF'. The 'Laboratory eMES IF' node is selected, and its sub-nodes 'Projects', 'Transactions', 'Transports', 'Listener Events', 'Listeners', 'Variables', 'Devices', 'Logs & Reports', and 'Administration' are visible. The 'Variables' node is selected, and the 'Laboratory eMES IF / Variables' window is displayed. This window shows a table of variables with columns 'Name', 'Type', 'Value', and 'Description'. The table lists variables from 'comZR0' to 'comZR4', all of which are 'WORD' type. The 'comZR0' variable is circled in red, and the 'comZR4' variable is circled in red. A red arrow points to the 'comZR0' variable, and another red arrow points to the 'comZR4' variable. The 'comZR0' variable is circled in red, and the 'comZR4' variable is circled in red. The 'comZR0' variable is circled in red, and the 'comZR4' variable is circled in red.

Name	Type	Value	Description
Q02HCPU	Q CPU		
Q02CPU	Q CPU		
Local CPU 1	Q CPU (Local)		
Q00CPU	Q CPU		
M	BIT[8192]		Bit Devices
X	BIT[8192]		Input Devices
Y	BIT[8192]		Output Devices
B	BIT[2048]		Link Relay
D	WORD[11136]		Word Devices
W	WORD[2048]		Link Register
ZR	WORD[65536]		Serial File Registers
SM	BIT[2048]		Special Bit Devices
SD	WORD[2048]		Special Word Devices
Aliases	Alias Mappings		
comZR0	WORD		[ZR0] - comment ZR0
comZR1	WORD		[ZR1] - comment ZR1
comZR2	WORD		[ZR2] - comment ZR2
comZR3	WORD		[ZR3] - comment ZR3
comZR4	WORD		[ZR4] - comment ZR4
ZR65530	WORD		[ZR65530] - comment ZR65530
ZR65531	WORD		[ZR65531] - comment ZR65531
ZR65532	WORD		[ZR65532] - comment ZR65532
ZR65533	WORD		[ZR65533] - comment ZR65533
ZR65534	WORD		[ZR65534] - comment ZR65534
ZR65535	WORD		[ZR65535] - comment ZR65535

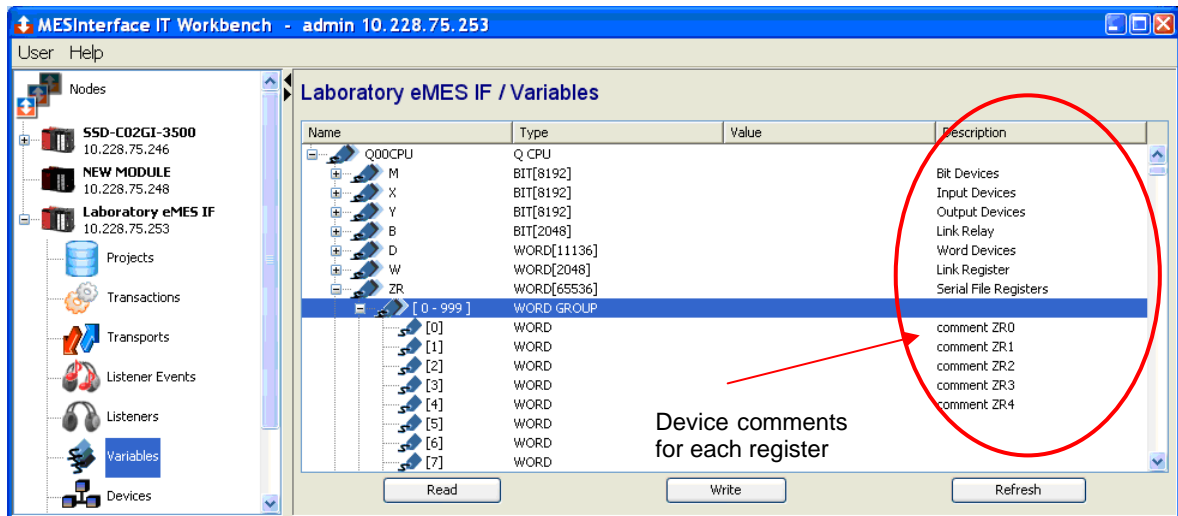
Device comments for each register

Alias

4.4.1 Device comment

Device comment is used for description that explains about each register.

Follow shows the sample screen.



4.4.2 Alias

Alias can be used as another name for devices.

5 SETTINGS AND PROCEDURE TO OPERATION

5.1 Step1 Defining the MELSEC CPU

When you install the Workbench, you also installed the MELSEC Driver and up to 5 connection to CPU.

This chapter shows the procedure to connect specifying Network Number and Station Number.

For more information on the definition and configuration of the device, refer to the following.

- [Appendix A: Defining and configuring Q Series CPU device](#)
- [Appendix B: Defining and configuring FX CPU device](#)
- [Appendix C: Defining and configuring GOT device](#)
- [Appendix D: Defining and configuring QnUDE\(H\) Series CPU \(Built-in Ethernet\) or L Series CPU \(Built-in Ethernet\) device](#)
- [Appendix E: Defining and configuring L Series CPU \(CC-Link IE Field\) device](#)

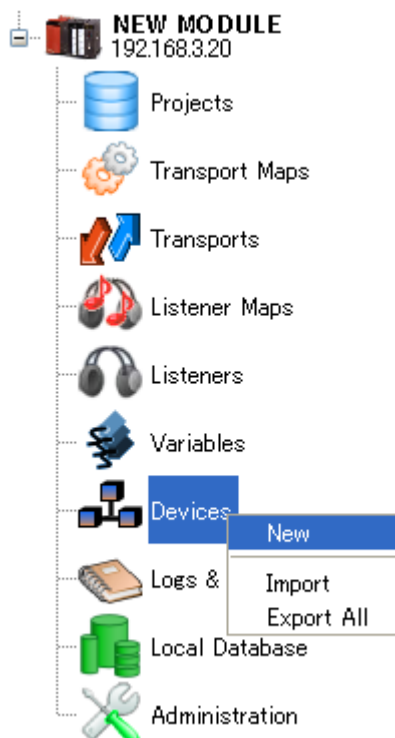
Point

In order to access a CPU on another station, routing parameters must be set in addition to this setting.

For the routing parameters, refer to the following:

➔ Manual for the network module used

1. From the Workbench left pane, expand the MESInterface IT module that you want to associate the new CPU with.



2. On the Devices screen, right click to display its pop-up menu, and then click New.
Or after select the Devices, click New button in right pane.

The Device window appears.

Device

Name:

Type:

Configuration

Protocol:

CPU Number:

Timeout:

Network number:

Station number:

☐ Use Advanced Properties

Additional Properties

Property	Value
----------	-------

This window defaults to the CPU type.

3. In the Name box, type MyCPU. This will be the unique name for the CPU. You will not be able to type invalid characters. For example, spaces are not allowed. You will not be able to insert a space in the name.
4. In the Type box, select "Q CPU (EZ)". This is the CPU type that you want to connect. You can also select "FX CPU", "GOT", "QnUDE(H) CPU (Built-in Ethernet)", "L CPU (Built-in Ethernet)" and "LCPU (EZ) (CC-Link IE Field)" besides "Q CPU (EZ)".
5. In the CPU Number box, select number of CPU in the multiple CPU system.
6. In the Protocol box, select "BRIDGE". This is the protocol to use the MESInterface module and CPU.
7. In the Timeout box, type the value that affects connection times. You can input the value of range 0 to 60000 (60 sec).

8. In the Network number box, type the network number of CPU if the CPU is remote. You can input the value of range 1 to 254.
9. In the Station number box, type the station number of CPU if the CPU is remote. You can input the value of range 0 to 120.
10. Click Validate
The Workbench tests the connection to the CPU.
11. A message will tell you whether or not the validation was successful.
Click OK.
12. If no errors are received, click Save.

The new CPU is saved to the MESInterface IT module and added the Devices window.

Add button is used for adding properties owned by devices MELSEC Driver doesn't have any own properties, so you don't need set properties.

5.2 Step2 Checking CPU state

You can see CPU state by table shown upper of right pane.

Name	Type	State	Last State Change	Last Modified	Status	Ext. Status
Local CPU 1	Q CPU (Local)	Started	2008-10-09 14:47:...	2008-10-09 14:47:...	0	0x0
NetworkController	Q CPU	Disabled	2008-10-09 14:48:...	2008-10-09 14:46:...	0	0x0
EQ_Loader	Q CPU	Stopped	n/a	2008-10-09 14:45:...	NA	NA

5.2.1 State

Started The CPU is working, and the Workbench can connect to the CPU.

Starting ... The CPU is starting.

Disabled ... It's failed to connect to the CPU from Workbench.

Stopped ... CPU is not working. Or the workbench has not yet connected to the CPU..

5.2.2 Last State Changed

It shows the last time of CPU state changed by modification function explained follow section.

5.2.3 Last State Modified

It shows the last time of CPU parameter of MESInterface IT changed with saving..

5.2.4 Status / Ext.Status

They show the error status of MELSEC CPU. Status 0 means the connection is successful. Status NA means the connection has not yet be tried.

For getting detail information, check the Error code chapter.

5.3 Step3 Modifying CPU state

When you change the CPU status, you can put CPU status by click the buttons shown bottom of right pane.

New	Edit	Delete	Start	Stop	Refresh
-----	------	--------	-------	------	---------

5.3.1 New

Create new CPU settings.

5.3.2 Edit

Edit existing CPU settings. This button is available if any CPU is selected.

5.3.3 Delete

Delete existing CPU settings. This button is available if any CPU is selected.

5.3.4 Start

Start existing CPU. This button is available if any disabled or stopped CPU is selected.

5.3.5 Stop

Stop existing CPU. This button is available if any started CPU is selected.

5.3.6 Refresh

Refresh the CPU status.

5.4 Step4 Checking CPU performances

When you check the CPU records or performances, you can see several parameter of them.

1. From the Workbench right pane, select CPU that you want to check.

NEW MODULE / Devices

CPU that you want to check

Name	Type	State	Last State Change	Last Modified	Status	Ext. Status
Local CPU 1	Q CPU (Local)	Started	2008-10-09 14:47:...	2008-10-09 14:47:...	0	0x0
NetworkController	Q CPU	Disabled	2008-10-09 14:48:...	2008-10-09 14:48:...	0	0x0
EQ_Loader	Q CPU	Stopped	n/a	2008-10-09 14:45:...	NA	NA

Status | Attributes

Runtime

Start Time (ms): 190 Last Read: 2008-10-09 14:49:05 Avg Read (ms): 0

Stop Time (ms): 20 0 Writes Last Write: n/a Avg Write (ms): 0

Latest Errors

Last Occurrence	First Occurrence	Variable	Status	Ext. Status	Repeats
2008-10-09 14:47:03	2008-10-09 14:47:03	X[2]	0	0x0	1
2008-10-09 14:47:04	2008-10-09 14:47:04	X[4]	0	0x0	1
2008-10-09 14:47:04	2008-10-09 14:47:04	X[3]	0	0x0	1

New Edit Delete Start Stop Refresh

2. You can see the selected CPU owned parameters at Status tab.

There is no property for MELSEC Driver to be shown at the Attributes tab screen.

Caution

If MESInterface IT reboots when the device starts, Free Memory might be shortage.

→ Stop the other device and restart the device.

6 Error code

This section describes the error codes that you might encounter when using the MESInterface IT MELSEC Driver. These error codes are available from the Devices window — Status and Extended Status columns. The Status column will always be a generic error code that can tell you if the error is a communication error, a data error, or some other internal device error. The Extended Status column provides the error code from the device driver. These error codes can be basic MESInterface IT error codes or specific to the third-party device driver. You must check the device driver documentation for a list of the specific error codes.

The value “-6232” means that MESInterface IT Communication Error was occurred.

If the value “-6232” is set at Status, MELSEC driver own error code is set at Ext.Status.

Error codes about MELSEC Driver are defined as following

Error code	Error Name	Description	Action
0001h	System error	--	<ul style="list-style-type: none"> When this error occurs, please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.
0002h	Response time out error	There is no response from the other station.	<ul style="list-style-type: none"> Review the “Access CPU settings.” Check the status of the communication cable, and the status of the access CPU.
0041h to 0044h	System error	--	<ul style="list-style-type: none"> When this error occurs, please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.
0045h	Processing code error	An unsupported processing code was issued.	<ul style="list-style-type: none"> The CPU type may have changed. Execute validation once again. If the error still occurs, please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.

Error code	Error Name	Description	Action
0046h	Station No. specification error	The specified station number is wrong.	<ul style="list-style-type: none"> Review the station number setting under "Access CPU settings."
0047h	Receive data error	Data have not been received.	<ul style="list-style-type: none"> Review the CPU of the access path.
0048h	System error	--	<ul style="list-style-type: none"> When this error occurs, please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.
0049h			
004Dh			
004Eh			
0050h			
0051h			
0064h	System error	--	<ul style="list-style-type: none"> When this error occurs, please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.
0065h	Routing parameter error	Routing parameters are not set.	<ul style="list-style-type: none"> Set the routing parameters in the MELSECNET/G, MELSECNET/H, and MELSECNET/10 modules.
0066h	Data send error Failed to send the data.	Data transmission failed.	<ul style="list-style-type: none"> Review the CPU of the access path.
0067h	Data receive error Failed to receive the data.	Data reception failed.	
0080h	Read size error The read size is not correct.	The read size is abnormal.	<ul style="list-style-type: none"> The CPU type may have changed. Execute validation once again. If the error still occurs, please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.
0082h	Device No. error	The specified device number is out of range.	<ul style="list-style-type: none"> The CPU type may have changed. Execute validation once again. If the error still occurs, please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.
0083h	Device point error	The number of device points is abnormal.	<ul style="list-style-type: none"> The CPU type may have changed. Execute validation once again. If the error still occurs, please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.
0084h	Write size error	The write size is abnormal.	
0085h	Link parameter error	The link parameters have been destroyed.	<ul style="list-style-type: none"> Reset the link parameters of the PLC CPU on the access path.
0087h to 0089h	System error	--	<ul style="list-style-type: none"> When this error occurs, please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.

Error code	Error Name	Description	Action
00D4h	System error	--	<ul style="list-style-type: none"> When this error occurs, please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.
00D8h	Protocol error	The communication procedure is abnormal.	<ul style="list-style-type: none"> When this error occurs, please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.
00D9h	Address error	The address is abnormal.	<ul style="list-style-type: none"> The CPU type may have changed. Execute validation once again. If the error still occurs, please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.
00DBh	Write error	Writing cannot be performed.	
00E0h	Station No. error	The specified station number does not exist.	<ul style="list-style-type: none"> Review the station number setting under "Access target CPU settings."
00E1h	Processing mode error	A request that the access target CPU cannot process has been made.	<ul style="list-style-type: none"> Review the PC series under "Access target CPU settings." The CPU type may have changed. Execute validation once again. If the error still occurs, please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.
00E3h	Other data error	The request data contains an error.	<ul style="list-style-type: none"> Review the CPU on the access path. When this error occurs, please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.
00E4h	Link specification error	A request that the link module on the access path cannot process has been received. (Unsupported access path)	<ul style="list-style-type: none"> Refer to the accessible range and review the access path. When this error occurs, please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.
00E8h	System error	--	<ul style="list-style-type: none"> When this error occurs, please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.
00E9h	Link timeout	During processing, the link of the access target was cancelled.	<ul style="list-style-type: none"> Recover the link on the access path.
00EAh	Special module BUSY	Preparations for reception cannot be made. The access target receive buffer may be full.	<ul style="list-style-type: none"> Review the hardware of the intelligent function (special function) module.

Error code	Error Name	Description	Action
00ECh	Access target BUSY	Preparations for reception cannot be made. The access target receive buffer may be full.	<ul style="list-style-type: none"> Review the access target.
00F0h	Link error	A request was made to a link cancelled station.	<ul style="list-style-type: none"> Recover the link on the access path.
100Eh	System error	--	<ul style="list-style-type: none"> When this error occurs, please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.
2000h to 20FFh			
4000h ~ 4FFFh	--	Error detected by the access target CPU	<ul style="list-style-type: none"> Refer to the user's manual of the access target CPU.
9000h	System error		
9006h			
9008h	Send buffer full	An applicable send buffer does not exist.	<ul style="list-style-type: none"> Review the CPU on the access path.
9202h	System error	--	<ul style="list-style-type: none"> When this error occurs, please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.
9204h			
920Ah			
9920h			
9922h			
9923h			
9E20h	Processing code error	A processing code that cannot be processed by the other CPU was issued.	<ul style="list-style-type: none"> Review the CPU on the access path.
9E82h	Device No. error	The device number specified for the access target station is out of range.	<ul style="list-style-type: none"> Review the device number entered under "Device tag settings."
9E83h	Number of device points error	The number of device points specified for the access target station is out of range.	<ul style="list-style-type: none"> Review the device number entered under "Device tag settings."
C000h to CFFFh	--	Error detected by the Ethernet interface module	<ul style="list-style-type: none"> Refer to the Ethernet interface module user's manual.
D000h to DFFFh	--	Error detected by the CC-Link IE Field network system	<ul style="list-style-type: none"> Refer to the CC-Link IE Field network system reference manual.

Error code	Error Name	Description	Action
E000h to EFFFh	--	Error detected by the CC-Link IE Control network system	<ul style="list-style-type: none"> Refer to the CC-Link IE Control network system reference manual.
F000h to FFFFh	--	Error detected by the MELSECNET/H or MELSECNET/10 network system	<ul style="list-style-type: none"> Refer to the MELSECNET/H or MELSECNET/10 network system reference manual.
FFD0h	System error	--	<ul style="list-style-type: none"> When this error occurs, please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.
FFD2h to FFD4h	System error	--	<ul style="list-style-type: none"> When this error occurs, please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.
FFD6h	System error	--	<ul style="list-style-type: none"> When this error occurs, please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.
FFD7h			
FFD9h to FFDEh			
FFDFh	Incorrect access target error		<ul style="list-style-type: none"> Review the device number entered under "Device tag settings." When this error occurs, please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.
FFE0h	System error	--	<ul style="list-style-type: none"> When this error occurs, please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.
FFE1h			
FFEDh to FFEFh			
FFF0h	Station or Network No. error	The setting of the access target CPU is incorrect.	Review the "Access target CPU settings."
FFF1h	System error	--	<ul style="list-style-type: none"> When this error occurs, please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.
FFF5h	System error	--	<ul style="list-style-type: none"> When this error occurs, please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.
FFF8h			
FFFAh			

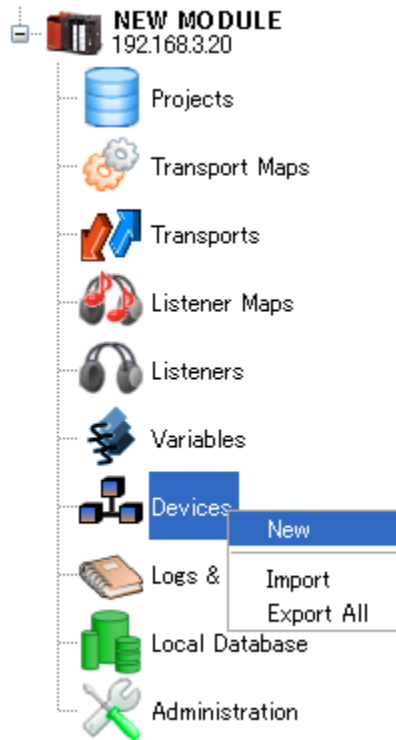
Error code	Error Name	Description	Action
FFFBh	Size error	The device exceeds the device range.	<ul style="list-style-type: none"> Review the device number used in the settings. The CPU type may have been changed. Execute validation once again.
FFFCh	CPU error	An invalid station was specified.	<ul style="list-style-type: none"> Check the settings of the network module on the access path. Review the station number in the settings.
FFFFh	System error	--	<ul style="list-style-type: none"> When this error occurs, please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.

Appendix A: Defining and configuring Q Series CPU device

Defining a Q Series CPU device

To define a device that represents a Q Series CPU device, follow these steps:

1. From the Workbench left pane, expand the MESInterface IT module that you want to associate the new CPU with.



2. On the Devices screen, right click to display its pop-up menu, and then click New.
Or after select the Devices, click New button in right pane.
The Device window appears.

3. Use the Type down-arrow, to select “Q CPU (EZ) “ under the Mitsubishi group.

The screenshot shows the 'Device' configuration window. The 'Type' dropdown menu is open, displaying a list of device types. Under the 'Mitsubishi' group, 'Q CPU (EZ)' is selected. Other visible options include 'FX CPU', 'GOT', 'PeerLINK', 'Device Connection', 'Node Connection', and 'Rockwell'. The 'Name' field is empty. Below the dropdown, the 'Timeout' is set to 10000. The 'Network number', 'Station number', and 'Local station number' are all set to 1. There is a checkbox for 'Use Advanced Properties' which is currently unchecked. At the bottom, there is a table for 'Additional Properties' with columns 'Property' and 'Value', and buttons for 'Add', 'Remove', 'Save', 'Validate', and 'Cancel'.

4. The Device window changes to accommodate the selected device type.

5. To define a device that represents a “Q CPU (EZ)“, set this new device's fields as follows:

The screenshot shows the 'Device' configuration window with the 'Type' set to 'Q CPU (EZ)'. The 'Configuration' section is expanded, showing the following settings: 'Protocol' is set to 'TCP', 'CPU Number' is set to '1', 'IP address' is empty, 'Timeout' is set to '10000', 'Network number' is set to '1', 'Station number' is set to '1', 'Local station number' is set to '1', and 'Per Variable Security' is set to 'False'. The 'Use Advanced Properties' checkbox is now checked. The 'Additional Properties' table at the bottom is empty, and the 'Add', 'Remove', 'Save', 'Validate', and 'Cancel' buttons are visible.

Mitsubishi Q Series CPU TCP or UDP Fields

In order to connect Q Series CPU by TCP or UDP, Q12DCCPU-V's first five digits of serial No. should be "12042" or later.

Field	Description
Name	Enter a name for the Q Series CPU
Type	Select "Q CPU (EZ)"
Protocol	Select "TCP" or "UDP"
CPU Number	Enter the location (slot number) of the CPU in the rack. The default value is 1.
IP Address	Enter the IP Address of the device.
Timeout	Enter the timeout value to use when communicating with this device. This is entered in milliseconds.
Network number	Enter the network number (1 – 254) for the device
Station number	Enter the station number (1 – 120) for the device
Local station number	Enter a local station number (1 – 120) for the MESInterface IT module
Per Variable Security	Select False to disable the allocation of additional memory to track User to Variable access for all Variables in this Device. Select True to enable this feature if required. See "Setting up Read Write per device variable" in the <i>MESInterface IT Systems Administration User's Guide</i> for more information.

Caution -----

For use of MESInterface IT software version "1.07H" or earlier

If you choose "TCP" in the Protocol box and the communication trouble happens between MESInterface IT and the target Q Series CPU, it is not possible for MESInterface IT to reconnect until you reboot MESInterface IT. Please select "UDP" in the Protocol box if this is inconvenient for your system, or use "1.08J" or later.

Mitsubishi Q Series CPU – BRIDGE Fields

In order to connect Q Series CPU via CC-Link IE Field, Q12DCCPU-V's first five digits of serial No. should be "14012" or later.

Field	Description
Name	Enter a name for the Q Series CPU device.
Type	Select "Q CPU (EZ)"
Protocol	Select "BRIDGE"
CPU Number	Enter the location (slot number) of the CPU in the rack. The default value is 1.
Timeout	Enter the timeout value to use when communicating with this device. This is entered in milliseconds.
Network number	Enter the network number (1 – 254) for the device
Station number	Enter the station number (0 – 120) for the device
Per Variable Security	Select False to disable the allocation of additional memory to track User to Variable access for all Variables in this Device. Select True to enable this feature if required. See "Setting up Read Write per device variable" in the <i>MESInterface IT Systems Administration User's Guide</i> for more information.

7. Select Validate to have MESInterface IT validate the fields and connect to the Mitsubishi PLC. If there is a problem connecting to the Mitsubishi PLC, an error code will be displayed.
8. Select Save to save the device definition. The device will appear in the Devices window list of devices.

9. You can now control the device (Start, Stop), access the device's variables by using the Variables window, and build solutions that use the device's resources.

Caution

For use of MESInterface IT software version "1.09K" or earlier

It cannot be connected to Q Series CPU via CC-Link IE Field.

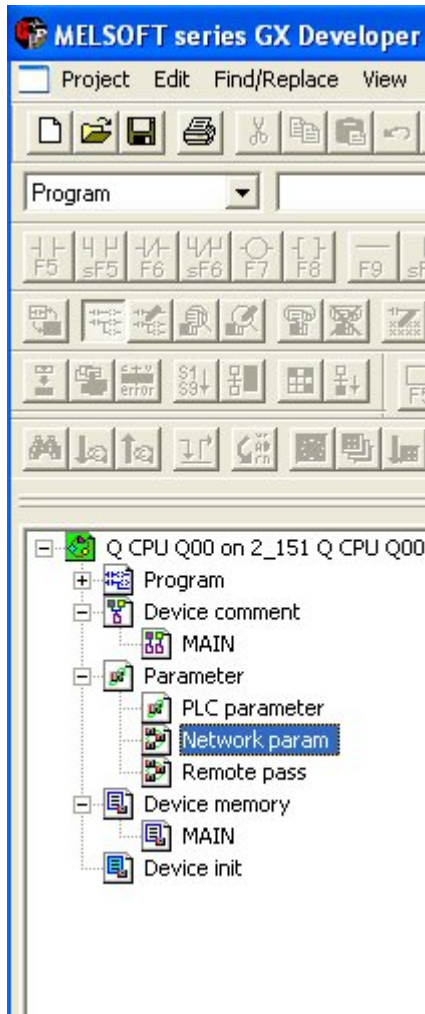
Warning

As using CC-Link IE Control or MELSECNET/H network system for communication among PLCs

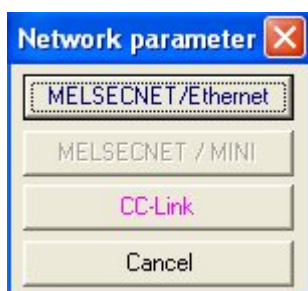
Don't set 0 to the "Station number". If you do, it will access a control station in the network system.

Configuring a Q Series CPU

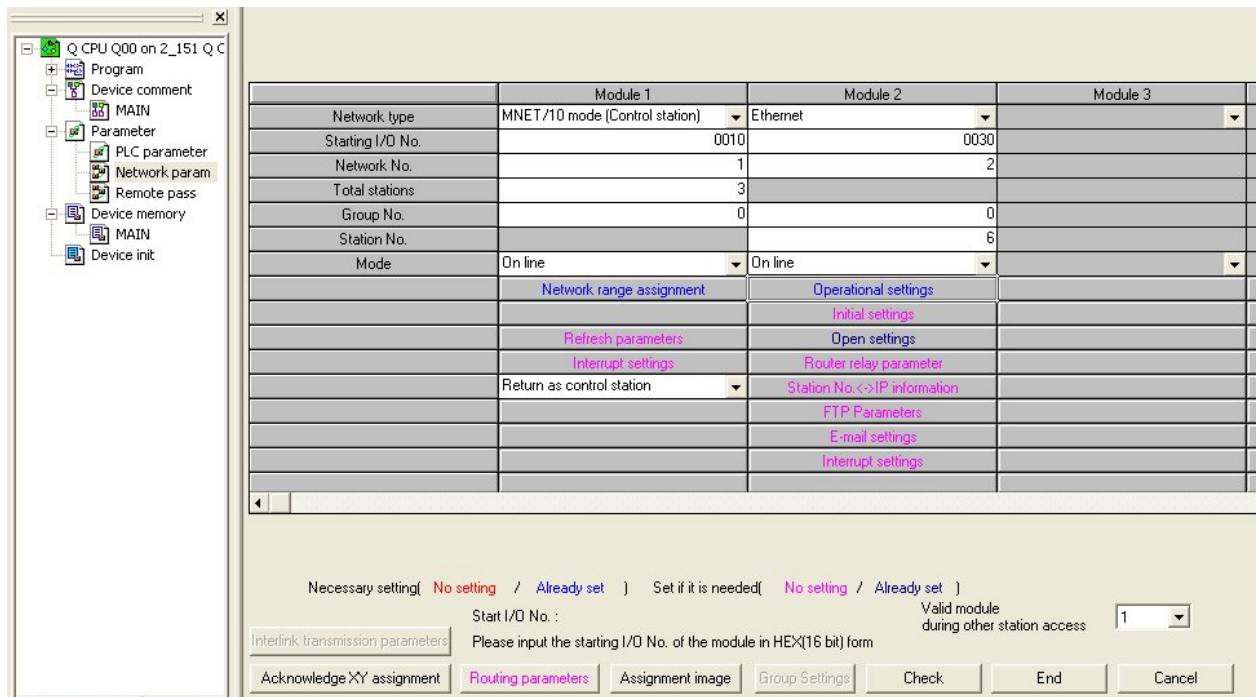
The Q Series CPU must be available to the MESInterface IT enabled device via a TCP/IP connection. The IP address of the CPU can easily be set and later obtained using the MELSOFT GX Developer software. In this example it's assumed the user has taken the steps necessary to either create a Q series CPU GX Developer Project or has read an existing GX Developer project.



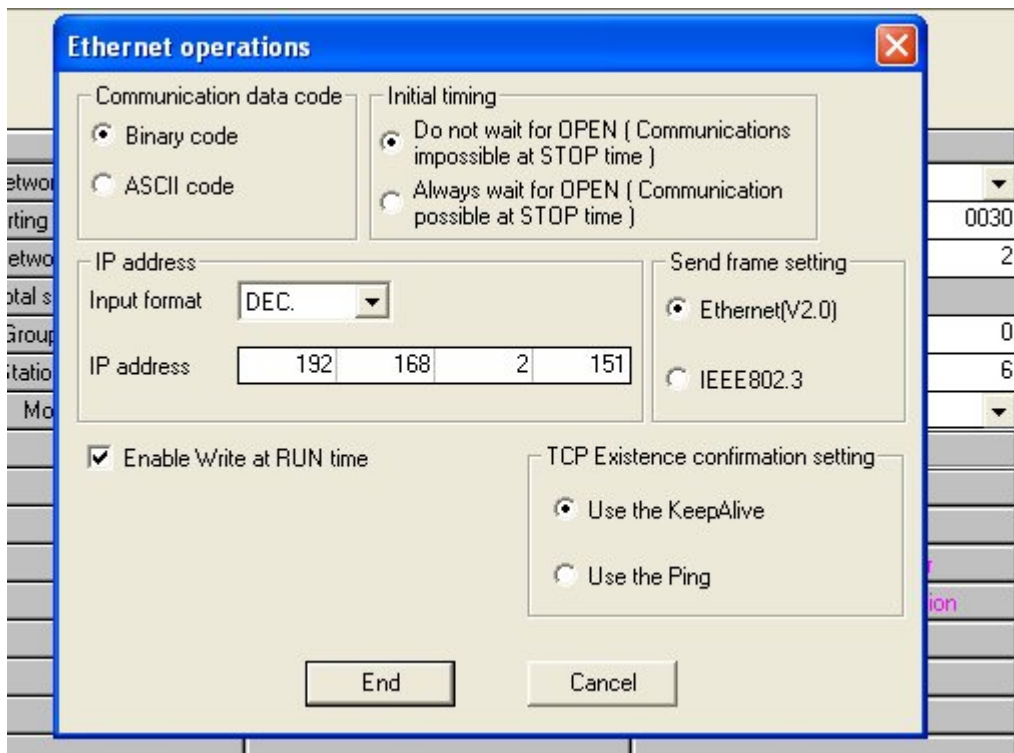
1. Select the Network Option. The Network Parameter window will be displayed.



2. Select the MELSECNET/Ethernet option on the Network Parameter window. The Module layout associated with the Q CPU will be displayed in the right pane of the GX Developer panel.



3. Select the Operational settings button on the Module that MESInterface IT will be communicating with. A window will be displayed that allows you to view and modify the IP address defined on the Q CPU.

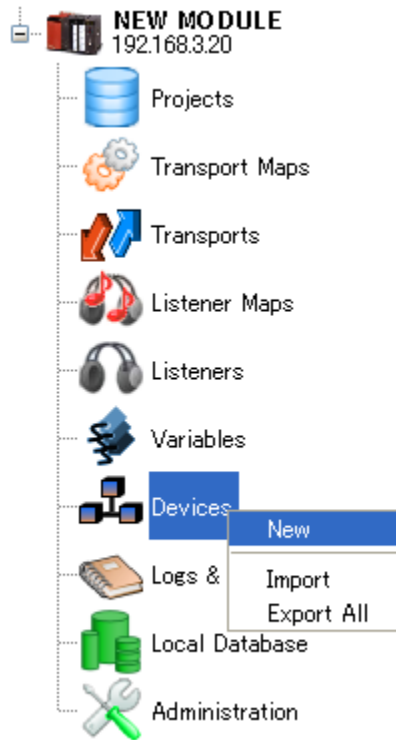


Appendix B: Defining and configuring FX CPU device

Defining a FX CPU device

To define a device that represents a FX CPU device, follow these steps:

1. From the Workbench left pane, expand the MESInterface IT module that you want to associate the new CPU with.



2. On the Devices screen, right click to display its pop-up menu, and then click New.
Or after select the Devices, click New button in right pane.
The Device window appears.

3. Use the Type down-arrow, to select “FX CPU” under the Mitsubishi group.

The screenshot shows the 'Device' configuration window. The 'Type' dropdown menu is open, displaying a list of device types. Under the 'Mitsubishi' group, 'FX CPU' is selected. Other visible options include 'Q CPU (EZ)', 'GOT', 'PeerLINK', 'Device Connection', 'Node Connection', and 'Rockwell'. The 'Name' field is empty. The 'Protocol' is set to 'GOT'. The 'CPU' is set to 'PeerLINK'. The 'IP address' is set to 'Node Connection'. The 'Timeout' is set to '10000'. The 'Network number' is set to '1'. The 'Station number' is set to '1'. The 'Local station number' is set to '1'. The 'Per Variable Security' is set to 'False'. The 'Use Advanced Properties' checkbox is checked. The 'Additional Properties' section is empty.

4. The Device window changes to accommodate the selected device type.

5. To define a device that represents a “FX CPU“, set this new device's fields as follows:

The screenshot shows the 'Device' configuration window with 'FX CPU' selected in the 'Type' dropdown. The 'Configuration' section is active, showing the following fields: 'Protocol' (TCP), 'IP address' (empty), 'Port' (0), 'Timeout' (5000), 'D Points' (8000), 'M Points' (7680), 'R Points' (0), 'X Points' (256), 'Y Points' (256), 'S Points' (0), and 'Per Variable Security' (False). The 'Use Advanced Properties' checkbox is checked. The 'Additional Properties' section is empty.

Mitsubishi FX CPU Fields

Field	Description
Name	Enter a name for the Mitsubishi FX device.
Type	Select "FX CPU".
Protocol	Select "TCP".
IP Address	Enter the IP Address of the device.
Port	Enter the port number used by the device.
Timeout	Enter the timeout value to use when communicating with this device. This is entered in milliseconds.
D Points	Enter the number of D points defined on the PLC.
M Points	Enter the number of M points defined on the PLC.
R Points	Enter the number of R points defined on the PLC.
X Points	Enter the number of X points defined on the PLC.
Y Points	Enter the number of Y points defined on the PLC.
S Points	Enter the number of S points defined on the PLC.
Per Variable Security	Select False to disable the allocation of additional memory to track User to Variable access for all Variables in this Device. Select True to enable this feature if required. See " <i>Setting up Read Write per device variable</i> " in the <i>MESInterface IT Systems Administration User's Guide</i> for more information.

7. Select **Validate** to have MESInterface IT validate the fields and connect to the Mitsubishi PLC. If there is a problem connecting to the Mitsubishi PLC, an error code will be displayed.
8. Select **Save** to save the device definition. The device will appear in the Devices window list of devices.
9. You can now control the device (Start, Stop), access the device's variables by using the Variables window, and build solutions that use the device's resources.

Configuring a FX3U ENET

To prepare the Mitsubishi FX3U ENET Connection for operation with the MESInterface IT, perform the following configuration steps using the Mitsubishi Fx Configurator-EN Utility.

Using the Fx Configurator-EN Operational Settings panel, select the features as shown in the figure below.

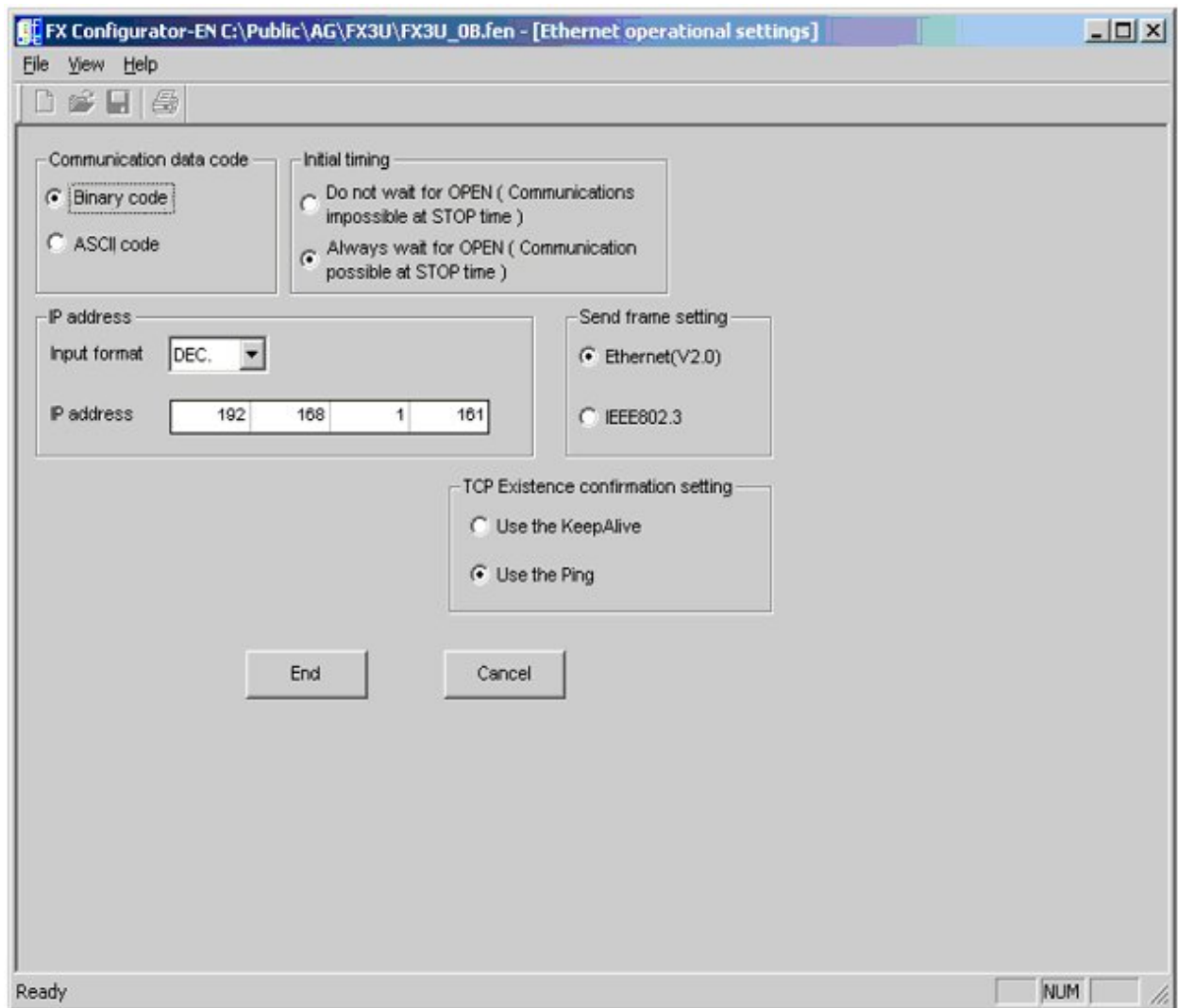
Communication Data Code = Binary Code

Initial Timing = Always Wait for OPEN

IP Address = (Format = Decimal) / (Address = 'As Required')

Send Frame Setting = Ethernet V2.0

TCP Existence Confirmation = Use Ping



Using the Fx Configurator-EN **Open Settings** panel, select the features as shown in the figure below.

Protocol = TCP

Open System = Unpassive

Fixed Buffer = Send

Fixed Buffer Communication Procedure = Procedure Exists(MC)

Pairing Open = Disable

Existence Configuration = No Confirm

Host Station Port Number = 'As Required' (We have used 10000 and 10010)

Transmission Target Device IP = N/A

Transmission Target Device Port = N/A

	Protocol	Open system	Fixed buffer	Fixed buffer communication procedure	Pairing open	Existence confirmation	Host station Port No. (DEC.)	Transmission target device IP address	Transmission target device Port No. (DEC.)
1	TCP	Unpassive	Send	Procedure exist(MC)	Disable	No confirm	10000		
2									
3									
4									
5									
6									
7									
8									

Ready NUM

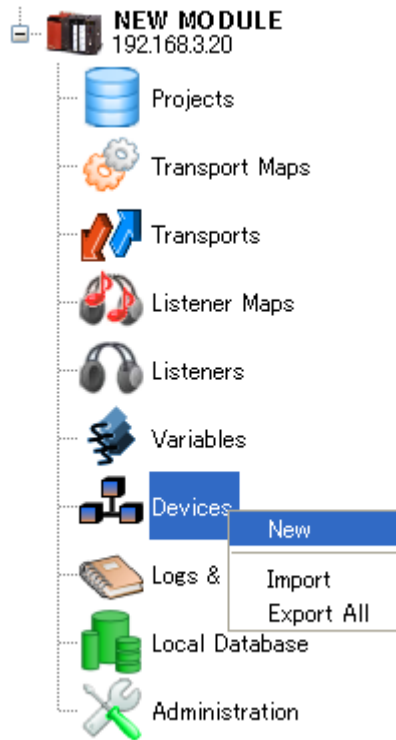
Depending on the model, the user may configure up to eight concurrent MESInterface IT interface channels using the FX3U ENET Adapter. Save the configurations settings to the FX3U unit and ENET module and then cycle power to the controller for a complete reset. You should be able to connect and command the FX3U controller.

Appendix C: Defining and configuring GOT device

Defining a GOT device

To define a device that represents a GOT(Graphic Operator Terminal) device, follow these steps:

1. From the Workbench left pane, expand the MESInterface IT module that you want to associate the new CPU with.



2. On the Devices screen, right click to display its pop-up menu, and then click New.
Or after select the Devices, click New button in right pane.
The Device window appears.

3. Use the Type down-arrow, to select “GOT” under the Mitsubishi group.

The screenshot shows the 'Device' configuration window. The 'Type' dropdown menu is open, displaying a list of device types. Under the 'Mitsubishi' group, 'GOT' is selected. Other visible options include 'Q CPU (EZ)', 'FX CPU', 'PeerLINK', 'Device Connection', 'Node Connection', and 'Rockwell'. The 'Name' field is empty. The 'Timeout' is set to 10000. The 'Network number', 'Station number', and 'Local station number' are all set to 1. The 'Per Variable Security' is set to False. The 'Use Advanced Properties' checkbox is checked. The 'Additional Properties' section is empty.

4. The Device window changes to accommodate the selected device type.

5. To define a device that represents a “GOT”, set this new device’s fields as follows:

The screenshot shows the 'Device' configuration window with 'GOT' selected in the 'Type' dropdown. The 'Configuration' section is active, showing the following fields: 'Protocol' is set to TCP, 'IP address' is empty, 'Port' is set to 5021, 'Timeout' is set to 3000, and 'Per Variable Security' is set to False. The 'Use Advanced Properties' checkbox is checked. The 'Additional Properties' section is empty.

Mitsubishi GOT Device Fields

Field	Description
Name	Enter a name for the GOT device.
Type	Select "GOT".
Protocol	Select "TCP" or "UDP", based on the protocol configured in the GOT device.
IP Address	Enter the IP Address of the device.
Port	Enter the port number used by the device. The default is 5021.
Timeout	Enter the timeout value to use when communicating with this device. This is entered in milliseconds.
Per Variable Security	Select False to disable the allocation of additional memory to track User to Variable access for all Variables in this Device. Select True to enable this feature if required. See <i>"Setting up Read Write per device variable"</i> in the <i>MESInterface IT Systems Administration User's Guide</i> for more information.

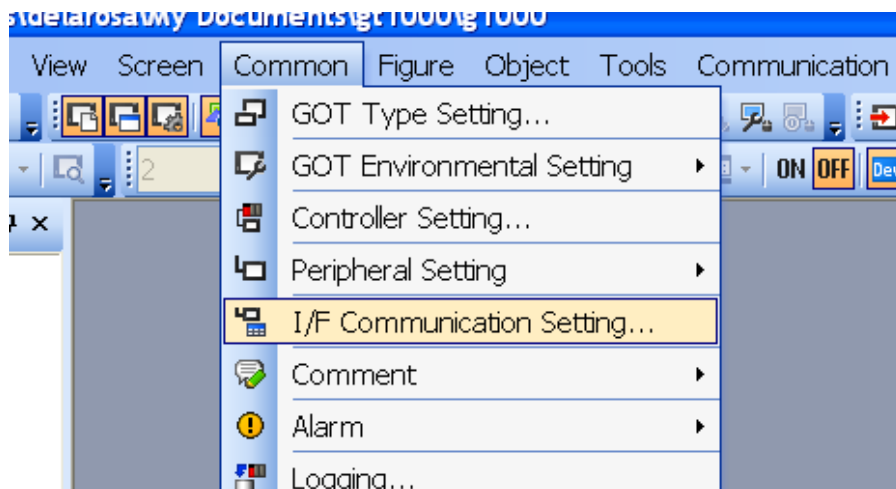
7. Select Validate to have MESInterface IT validate the fields and connect to the Mitsubishi PLC. If there is a problem connecting to the Mitsubishi PLC, an error code will be displayed.
8. Select Save to save the device definition. The device will appear in the Devices window list of devices.
9. You can now control the device (Start, Stop), access the device's variables by using the Variables window, and build solutions that use the device's resources.

Configuring a GOT device

The GOT must have a firmware level that supports Protocol Format 7, (MC Protocol 4E frames) over Ethernet.

To prepare the GOT for communication with the MESInterface IT, perform the following configuration steps using the Mitsubishi GT Designer 3 software.

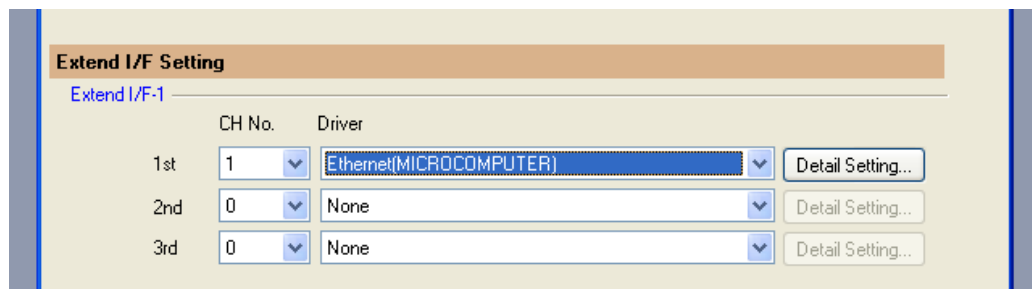
1. In the Project for the GOT, select the Common tab and then the I/F Communication Setting option:



2. In the Extend I/F Setting section, for the 1st setting select:

CH No. = 1

Driver = Ethernet(MICROCOMPUTER)



3. Select the “Detail Setting...” button, to display the following window:

Property	Value
GOT NET No.	1
GOT PLC No.	1
GOT IP Address	192.168.2.146
IP Label	
Subnet Mask	255.255.252.0
Default Gateway	192.168.1.1
Ethernet Download Port No.	5014
GOT Communication Port No.	5021
Startup Time(Sec)	3
Delay Time(x10ms)	0
32bit Storage	LH Order
Protocol	TCP/IP
Format	7
Interrupt Data Byte	1
Special Interrupt Code	No
Living Confirmation	Yes
Living Confirmation Cycle(Sec)	20

OK Cancel

4. Set the fields in the Detail Setting window to match your device and network configuration, including these specific values:

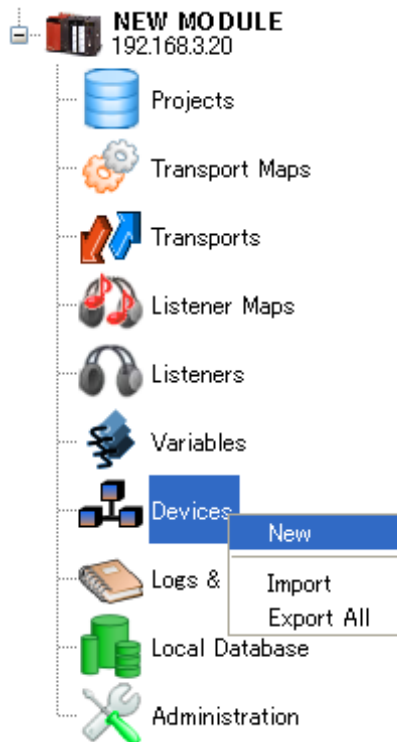
Property	Value
GOT IP Address	The IP address in the network. This IP address is used in the MESInterface IT device that represents this GOT.
GOT Communication Port No.	5021 is the default. If this is changed, it must also be changed in the MESInterface IT device.
32bit Storage	LH Order
Protocol	Select TCP/IP or UDP/IP. This must match the value in the MESInterface IT device.
Format	7 (MC protocol binary)
Living Confirmation	Yes
Living Confirmation Cycle(Sec)	20

Appendix D: Defining and configuring QnUDE(H) Series CPU (Built-in Ethernet) or L Series CPU (Built-in Ethernet) device

Defining a QnUDE(H) Series CPU (Built-in Ethernet) or L Series CPU (Built-in Ethernet) device

To define a device that represents a QnUDE(H) Series CPU (Built-in Ethernet) or L Series CPU (Built-in Ethernet) device, follow these steps:

1. From the Workbench left pane, expand the MESInterface IT module that you want to associate the new CPU with.



2. On the Devices screen, right click to display its pop-up menu, and then click New.
Or after select the Devices, click New button in right pane.
The Device window appears.

3. Use the Type down-arrow, to select “QnUDE(H) CPU (Built-in Ethernet)” or “L CPU (Built-in Ethernet)” under the Mitsubishi group.

The screenshot shows the 'Device' configuration window. The 'Type' dropdown is open, displaying the 'Mitsubishi' group. Under this group, the following options are visible: 'Q CPU (EZ)', 'Q CPU (EZ)', 'FX CPU', 'GOT', 'QnUDE(H) CPU (Built-in Ethernet)', and 'PeerLINK'. The 'QnUDE(H) CPU (Built-in Ethernet)' option is currently selected. Other fields in the window include 'Name', 'Protocol' (set to GOT), 'IP address' (with 'Device Connection' and 'Node Connection' options), 'Timeout' (set to 10000), 'Network number' (set to 1), 'Station number' (set to 1), and 'Local station number' (set to 1). There is a checkbox for 'Use Advanced Properties' and an 'Additional Properties' section with a table for properties and values.

4. The Device window changes to accommodate the selected device type.

5. To define a device that represents a “QnUDE(H) CPU (Built-in Ethernet)” or “L CPU (Built-in Ethernet)”, set this new device’s fields as follows:

The screenshot shows the 'Device' configuration window with the 'Type' set to 'QnUDE(H) CPU (Built-in Ethernet)'. The 'Configuration' section is active, showing the following settings: 'Protocol' is set to 'TCP'; 'IP address' is empty; 'Port' is set to '5012'; 'Timeout' is set to '3000'; 'Maximum Connections' is set to '1'; 'Per Variable Security' is set to 'False'; and the 'Use Advanced Properties' checkbox is checked. The 'Additional Properties' section at the bottom contains an empty table with columns for 'Property' and 'Value'. Buttons for 'Add', 'Remove', 'Save', 'Validate', and 'Cancel' are visible at the bottom of the window.

Mitsubishi QnUDE(H) Series CPU (Built-in Ethernet) or L Series CPU (Built-in Ethernet) Fields

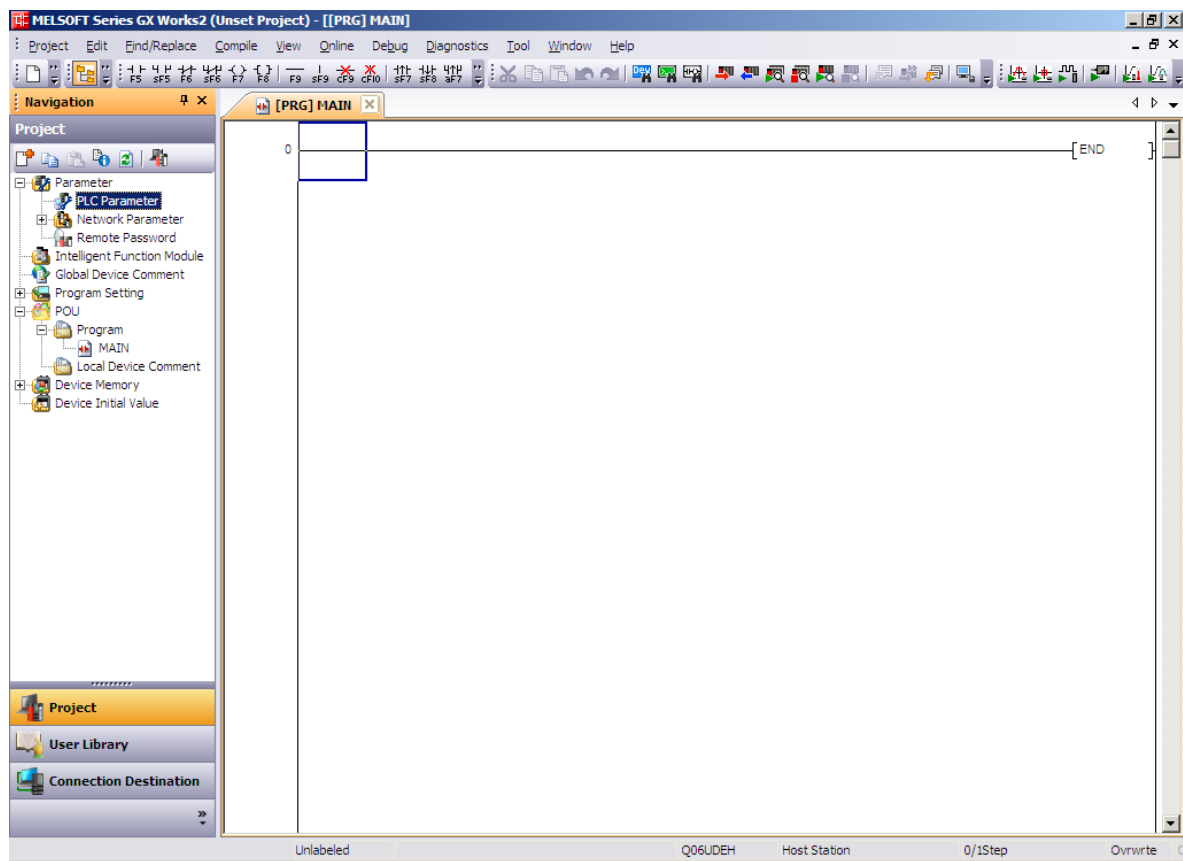
Field	Description
Name	Enter a name for the QnUDE(H) Series CPU or L Series CPU device.
Type	Select “QnUDE(H) CPU (Built-in Ethernet)” or “L CPU (Built-in Ethernet)”.
Protocol	Select TCP.
IP Address	Enter the IP Address of the device. *See “Configuring a QnUDE(H) Series CPU or L Series CPU” for details on setting/obtaining the IP Address for a QnUDE(H) Series CPU or L Series CPU.
Port	Enter the port number used by the device. The default for the QnUDE(H) and L Series CPU is 5012.
Timeout	Enter the timeout value to use when communicating with this device. This is entered in milliseconds.
Maximum Connections	A numeric value that indicates the maximum number of asynchronous connections that MESInterface IT will attempt to make with this QnUDE(H) Series CPU or L Series CPU device. The default value is 1, the maximum value is 10.
Per Variable Security	Select False to disable the allocation of additional memory to track User to Variable access for all Variables in this Device. Select True to enable this feature if required. See “Setting up Read Write per device variable” in the <i>MESInterface IT Systems Administration User’s Guide</i> for more information.

7. Select **Validate** to have MESInterface IT validate the fields and connect to the Mitsubishi PLC. If there is a problem connecting to the Mitsubishi PLC, an error code will be displayed.
8. Select **Save** to save the device definition. The device will appear in the Devices window list of devices.
9. You can now control the device (Start, Stop), access the device’s variables by using the Variables window, and build solutions that use the device’s resources.

Configuring a QnUDE(H) Series CPU or L Series CPU

The MESInterface IT has the ability to interface with the QnUDE(H) family of Mitsubishi MELSEC CPUs and the MELSEC L Series of CPUs. The configuration steps for the QnUDE(H) and L Series CPUs using the MELSOFT GX Works2 software are similar. The QnUDE(H) or L Series CPU must be available to the MESInterface IT enabled device via a TCP/IP connection. The IP address of the CPU can easily be set and later obtained using the MELSOFT GX Works2 software. In this example it's assumed the user has taken the steps necessary to either create a new Q or L CPU GX Works2 Project or has read an existing GX Works2 project.

1. After creating a GX Works2 Project (or opening an existing one), expand the Parameter option and then select the PLC Parameter option.



- The Q or L Parameter Setting panel will be displayed. Select the Built-in Ethernet Port Setting tab.

The screenshot shows the 'Q Parameter Setting' dialog box with the 'Built-in Ethernet Port Setting' tab selected. The dialog has a tabbed interface at the top with the following tabs: PLC Name, PLC System, PLC File, PLC RAS, Boot File, Program, SFC, Device, I/O Assignment, Multiple CPU Setting, and Built-in Ethernet Port Setting. The main area contains the following settings:

- IP Address Setting:**
 - Input Format: DEC. (dropdown)
 - IP Address: 192, 168, 2, 45 (four input fields)
 - Subnet Mask Pattern: 255, 255, 252, 0 (four input fields)
 - Default Router IP Address: 192, 168, 1, 1 (four input fields)
- Buttons:** Open Setting, FTP Setting, Time Setting.
- Communication Data Code:**
 - ☒ Binary Code
 - ☐ ASCII Code
- Checkboxes:**
 - ☒ Enable online change (FTP, MC Protocol)
 - ☐ Disable direct connection to MELSOFT
 - ☐ Do not respond to search for CPU (Built-in Ethernet port) on network
- Status:** Set if it is needed(Default / Changed)

At the bottom, there are buttons for: Print Window..., Print Window Preview, Acknowledge XY Assignment, Default, Check, End, and Cancel.

- On this panel, set the fields as follows:

Property	Value
Input Format	DEC.
IP Address	The IP address of the QnUDE(H) or L Series CPU
Subnet Mask Pattern	As specified by your network administrator
Default Router IP Address	As specified by your network administrator
Communication Data Code	Select Binary Code
Enable online change (FTP, MC Protocol)	Select this check box

4. Select the Open Setting button to display the Built-in Ethernet Port Open Setting panel

	Protocol	Open System	TCP Connection	Host Station Port No.	Destination IP Address	Destination Port No.
1	UDP	MELSOFT Connection				
2	TCP	MC Protocol		1394		
3	TCP	MC Protocol		1394		
4	TCP	MC Protocol		1394		
5	TCP	MC Protocol		1394		
6	TCP	MC Protocol		1394		
7	TCP	MC Protocol		1394		
8	TCP	MC Protocol		1394		
9	TCP	MELSOFT Connection				
10	TCP	MELSOFT Connection				
11	TCP	MELSOFT Connection				
12	TCP	MELSOFT Connection				
13	TCP	MELSOFT Connection				
14	TCP	MELSOFT Connection				
15	TCP	MELSOFT Connection				
16	TCP	MELSOFT Connection				

Host station port No, destination port No: Please input in HEX.

End Cancel

5. On this panel, set the number of TCP connections you want configured for the QnUDE(H) or L Series CPU by setting:
 - Protocol = TCP
 - Open System = MC Protocol
 - Host Station Port No. = 1394

The example panel above shows 7 TCP connections configured with the Port value entered in hexadecimal. The value 1394 in hex equals the value 5012 that you can configure in the MESInterface IT Device definition for the CPU (the port value of 5012 is the default value in the MESInterface IT definition).

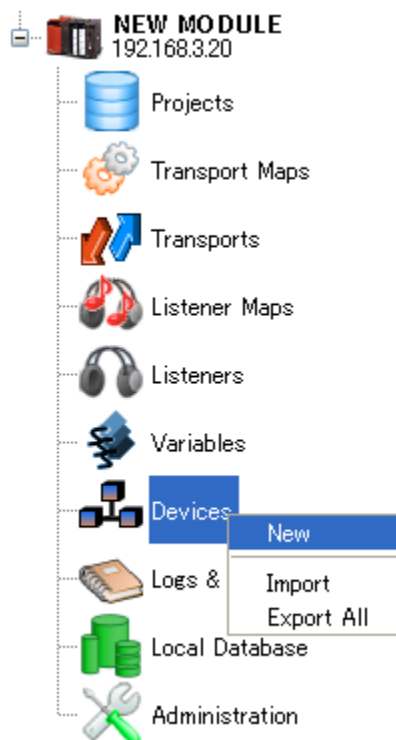
The number of TCP connections configured in the GX Works2 project is for all applications that might connect to the QnUDE(H) or L Series CPU. The MESInterface IT Device definition for the CPU has a field **Maximum Connections**, which is the maximum number of connections that the MESInterface IT will attempt to use when connected to the CPU. For this example CPU, the GX Works2 definition has 7 TCP connections. The MESInterface IT Device definition might be set to 3, if other applications besides MESInterface IT also need to connect to the CPU.

Appendix E: Defining and configuring L Series CPU (CC-Link IE Field) device

Defining a L Series CPU (CC-Link IE Field) device

To define a device that represents a L Series CPU (CC-Link IE Field) device, follow these steps:

1. From the Workbench left pane, expand the MESInterface IT module that you want to associate the new CPU with.



2. On the Devices screen, right click to display its pop-up menu, and then click New.
Or after select the Devices, click New button in right pane.
The Device window appears.

3. Use the Type down-arrow, to select “L CPU (EZ) (CC-Link IE Field)” under the Mitsubishi group.

The screenshot shows the 'Device' configuration window. The 'Type' dropdown menu is open, displaying a list of device types. The option 'L CPU (EZ) (CC-Link IE Field)' is highlighted. Other visible options include 'Q CPU (EZ)', 'FX CPU', 'GOT', 'QnUDE(H) CPU (Built-in Ethernet)', 'L CPU (Built-in Ethernet)', 'PeerLINK', 'Device Connection', and 'Node Connection'. The 'Name' field is empty. The 'Timeout' is set to 10000. The 'Network number' is 1, 'Station number' is 0, and 'Local station number' is 1. The 'Use Advanced Properties' checkbox is unchecked. The 'Additional Properties' section is empty.

4. The Device window changes to accommodate the selected device type.

5. To define a device that represents a “L CPU (EZ) (CC-Link IE Field)”, set this new device’s fields as follows:

The screenshot shows the 'Device' configuration window with the 'Type' set to 'L CPU (EZ) (CC-Link IE Field)'. The 'Configuration' tab is active. The 'Protocol' is set to 'BRIDGE'. The 'CPU Number' is 1. The 'Timeout' is 10000. The 'Network number' is 1, 'Station number' is 0, and 'Per Variable Security' is set to 'False'. The 'Use Advanced Properties' checkbox is checked. The 'Additional Properties' section is empty.

Mitsubishi L Series CPU (CC-Link IE Field) – BRIDGE Fields

In order to connect L Series CPU via CC-Link IE Field(BRIDGE is Selected as Protocol), Q12DCCPU-V's first five digits of serial No. should be "14012" or later.

Field	Description
Name	Enter a name for the L Series CPU device.
Type	Select "L CPU (EZ) (CC-Link IE Field)"
Protocol	Select "BRIDGE"
CPU Number	Enter the location (slot number) of the CPU in the rack. The default value is 1.
Timeout	Enter the timeout value to use when communicating with this device. This is entered in milliseconds.
Network number	Enter the network number (1 – 254) for the device
Station number	Enter the station number (0 – 120) for the device
Per Variable Security	Select False to disable the allocation of additional memory to track User to Variable access for all Variables in this Device. Select True to enable this feature if required. See " <i>Setting up Read Write per device variable</i> " in the <i>MESInterface IT Systems Administration User's Guide</i> for more information.

7. Select Validate to have MESInterface IT validate the fields and connect to the Mitsubishi PLC. If there is a problem connecting to the Mitsubishi PLC, an error code will be displayed.
8. Select Save to save the device definition. The device will appear in the Devices window list of devices.
9. You can now control the device (Start, Stop), access the device's variables by using the Variables window, and build solutions that use the device's resources.

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MESInterface IT

Quick Start MELSEC Driver

MODEL	
MODEL CODE	
BAD-804Q006-A7	



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